

Application No. 10/525,752  
Amendment dated May 12, 2006  
Reply to Office Action of January 17, 2006

Docket No.: 12810-00019-US

### REMARKS

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicants would like to thank Examiner Acquah for the helpful and courteous discussion he had with Applicants' U.S. representative on May 10, 2006. At that time, Applicants' U.S. representative noted the differences between the claimed process and the cited references. Specifically, Applicants' U.S. representative noted that Mexiner (U.S. 4,983,712) and Lincoln (U.S. 2,807,606) do not teach or suggest the claimed reaction temperature of 40 to 160°C. Sorensen (U.S. 6,093,777) does not teach or suggest a dicarboxylic acid component. GB '514 (GB 2 259 514) does not teach or suggest the claimed esterification catalyst. In addition, Applicants' U.S. representative proposed amending claim 1 to include at least one saturated monocarboxylic acid or at least one monofunctional alcohol as a chain stopper. It was noted that Beck (U.S. 5,096,938) does not teach or suggest the use of these claimed components as a chain stopper. The following is intended to expand on that discussion.

The presently claimed process is directed to a method for preparing essentially uncrosslinked hyperbranched water-soluble or water-dispersable polyesters. The process involves reacting at least one dicarboxylic acid or a dicarboxylic acid derivative (A) with at least one polyester polyol (B) having  $n$  OH groups, where  $n \geq 3$ , and at least one saturated monocarboxylic acid or at least one monofunctional alcohol as a chain stopper (S), at from 40 to 160°C in the presence of a catalyst. Components (A) and (B) are utilized in amounts such that the molar ratio of OH groups to COOH groups is from 2:1 to 1:2. The process provides for the production of water-soluble or water-dispersable hyperbranch polyesters which are useful in the preparation of polyaddition or polycondensation polymers and for the production of printing inks, adhesives, coatings, paints and varnishes. The claimed process is not taught or suggested by the cited references.

Application No. 10/525,752  
Amendment dated May 12, 2006  
Reply to Office Action of January 17, 2006

Docket No.: 12810-00019-US

The rejection of claims 1-15 and 21-29 under 35 USC §102(b) over Meixner (U.S. 4,983,712) is respectfully traversed.

Meixner describes a process for producing polyesters which contain one or more acryloyl groups. The process involves reacting a dicarboxylic acid with at least one dihydric alcohol and at least one trihydric polyetherpolyol at 180-250°C and subsequently reacting this mixture with acrylic acid to form the polyester containing acryloyl groups. The goal in Meixner is to produce a radiation curable resin. The esterification temperature of 180-250°C described in Meixner is well outside the claimed range of 40-160°C. Applicants note that the reaction temperatures described in Meixner would lead to undesirable crosslinking reactions. Because Meixner does not teach or suggest all the claim limitations of the claim process, the claimed process would not have been anticipated obvious over Meixner. Accordingly, applicants respectfully request that the Examiner withdraw the rejection over Meixner.

The rejection of claims 1-15 and 21-29 under 35 U.S.C. § 102(b) over Sorensen (U.S. 6,093,777) is respectfully traversed.

Sorensen describes a thermosetting resin containing a polyester toughening agent. Sorensen exemplifies (Examples 1-4 in columns 13-15) the production of esters with a hydroxymonocarboxylic acid (2,2-dimethylolpropionic acid). Because Sorensen does not teach or suggest the use of a dicarboxylic acid in the reaction process, the claimed process would not have been anticipated or obvious over Sorensen. Accordingly, applicants respectfully request that the Examiner withdraw the rejection over Sorensen.

The rejection of claims 1-9, 12-15 and 21-29 under 35 U.S.C. § 102(b) over Beck (U.S. 5,096,938) is respectfully traversed.

Beck describes a radiation curable acrylate which is obtained by reacting a polyol with a polybasic carboxylic acid or anhydride and an acrylic acid to form an ester then epoxidizing the

Application No. 10/525,752  
Amendment dated May 12, 2006  
Reply to Office Action of January 17, 2006

Docket No.: 12810-00019-US

ester to form a radiation curable acrylate. The process described in Beck requires utilizing the unsaturated monocarboxylic acid, acrylic acid, to form the radiation curable acrylate. Beck does not teach or suggest a process that includes at least one saturated monocarboxylic acid or at least one monofunctional alcohol as a chain stopper. Accordingly, the claimed process would not have been anticipated by Beck. In addition, the claimed process would not have been obvious over Beck since there is no motivation to modify Beck by eliminating the required process steps of acrylic acid addition and epoxidation. In addition there is no motivation to modify Beck by adding the claimed chain stopper (S). Accordingly, applicants respectfully request that the Examiner withdraw the rejection over Beck.

The rejection of claims 1-11 and 21-29 under 35 USC § 102(b) over Lincoln (U.S. 2,807,606) is respectfully traversed.

Lincoln describes condensation polymers prepared by reacting a diol (ethylene glycol) and minor amounts of a tetrol with a dicarboxylate at 190 to 280°C. The process described in Lincoln utilizes minor amounts of the tetrol component relative to the carboxylic acid component (38 parts dimethyl terephthalate and 3-8 parts tetrol), and accordingly, the OH/COOH ratio described in Lincoln is well outside the claimed OH/COOH molar ratios of 2:1 to 1:2 for components (A) and (B). In addition, the process in Lincoln requires significant amounts of a diol component ( $n=2$  versus claimed  $n \geq 3$ ) and the esterification reaction is run at temperature of from 190° to 280°C which is well outside the claimed reaction temperature range of 40 to 160°C. Accordingly, Lincoln does not teach or suggest all the claim limitations of the claimed process, and therefore, the claimed process would not have been anticipated or obvious over Lincoln. As such, applicants respectfully request that the Examiner withdraw the rejection over Lincoln.

Application No. 10/525,752  
Amendment dated May 12, 2006  
Reply to Office Action of January 17, 2006

Docket No.: 12810-00019-US

The rejection of claims 1-10 and 21-29 under 35 USC §102(b) over GB '514 (GB 2 259 514) is respectfully traversed.

GB '514 describes a coating composition containing a polyester component. The polyester component is prepared by reacting a polyether diol, a polyether polyol and a diabasic acid. GB '514 does not teach or suggest the use of an esterification catalyst. In addition, GB '514 does not teach or suggest the claimed stopper components (S) in the claimed process. Therefore, GB '514 does not meet all the claim limitation of the claimed process. Accordingly, the claimed process would not have been anticipated or obvious over GB '514, and as such, applicants respectfully request that the Examiner withdraw the rejection.

The rejection of claims 18-20 under 35 U.S.C. § 103(a) over GB '514, Meixner, Beck or Sorensen in view of DE 101 631 64.4 or DE 102 195 08.0 is respectfully traversed.

Applicants note that a typographical error in the specification listed DE 101 631 64.4 as Applicants' unpublished application. No such application number exists and the specification should have listed DE 101 631 63 instead of 101 631 64.4 (see IDS filed with this response). The U.S. equivalent for 101 631 63 is U.S. Publication No. 20050054812. The U.S. equivalent for DE 102 195 08 is U.S. Publication No. 20050165177. In addition, Applicants note that DE 101 631 63 listed on the IDS filed May 25, 2005 erroneously listed the Publication date as December 20, 2001 (filing date). The correct publication date is July 3, 2003.

In view of the discussion above for the primary references, Applicants submit that claims 18-20 would not have been obvious over the cited references, and therefore, Applicants respectfully request that the Examiner withdraw the rejection under 35 U.S.C. § 103(a).

In light of the remarks contained herein, Applicants respectfully request that the present application is now in condition for allowance. Favorable reconsideration is requested.

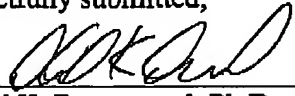
Application No. 10/525,752  
Amendment dated May 12, 2006  
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Docket No.: 12810-00019-US

A one-month extension of time fee is due with this response. The Commissioner is hereby authorized in this, concurrent, and further replies, to charge payment or credit any overpayment to Deposit Account No. 22-0185, under Order No. 12810-00019-US from which the undersigned is authorized to draw.

Dated: May 12, 2006

Respectfully submitted,

By 

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